

In the Claims

Please replace all prior versions, and listings, of claims in the application with the following list of claims:

1. (Currently Amended) A pixel gain amplifier circuit comprising:
an amplifier having an input and an output;
an input capacitor, ~~coupled to the input of the amplifier~~, onto which input capacitor charge from an input pixel is sampled during a first of first and second time phases, wherein the input capacitor is functionally coupled to the input of the amplifier during the first and second time phases; and
a feedback capacitor, coupled between the input and the output of the amplifier, that samples a reference voltage during the first time phase and receives charge from the input capacitor during the second time phase.
2. (Previously Presented) The pixel gain amplifier circuit as claimed in claim 1 wherein the input capacitor includes a variable capacitor.
3. (Cancelled)
4. (Previously Presented) The pixel gain amplifier circuit of claim 2 wherein a capacitance of the input capacitor changes at a rate corresponding to a rate at which pixels are input into the circuit.
5. (Previously Presented) The pixel gain amplifier circuit as claimed in claim 1 wherein the feedback capacitor includes a variable capacitor.
6. (Previously Presented) The pixel gain amplifier circuit as claimed in claim 5 wherein the feedback capacitor comprises a capacitor array.

7. (Previously Presented) The pixel gain amplifier circuit of claims 5 or 6 wherein a capacitance of the feedback capacitor changes at a rate corresponding to a rate at which pixels are input into the circuit.

8. (Previously Presented) The pixel gain amplifier circuit as claimed in claim 1 further comprising an offset correction circuit.

9. (Currently Amended) A method of amplifying input pixels comprising the steps of:
sampling an input pixel during a first of first and second time phases;
amplifying the sampled input pixel during the second time phase; and
controlling a gain of the amplification of the input pixel at the pixel rate ~~for each pixel~~ in response to a gain control signal comprising information related to a desired gain.

10. (Currently Amended) A pixel gain amplifier circuit comprising:
an amplifier having an input, an output and a gain; and
means for varying the gain of the amplifier from a first gain for a first pixel to a second gain for a second pixel, wherein the first and second gains are determined, at least in part, by an input capacitor and a feedback capacitor.

11. (Previously Presented) The pixel gain amplifier circuit according to claim 10 wherein the means for varying the gain of the amplifier includes a capacitor array.

12. (Previously Presented) The pixel gain amplifier circuit according to claim 10 wherein the means for varying the gain of the amplifier comprises means for varying the gain of the amplifier at a rate corresponding to a rate at which pixels are input into the circuit.

13. (Previously Presented) The pixel gain amplifier circuit of claim 8, wherein an input of the offset correction circuit is coupled to the output of the amplifier and an output of the offset correction circuit is coupled to the input of the amplifier.

14. (Previously Presented) The pixel gain amplifier circuit of claim 10, wherein the input capacitor is a variable capacitor.

15. (Previously Presented) The pixel gain amplifier circuit of claim 10, wherein the feedback capacitor is a variable capacitor.

16. (Previously Presented) The pixel gain amplifier circuit of claim 10, further comprising an offset correction circuit, wherein an input of the offset correction circuit is coupled to the output of the amplifier and an output of the offset correction circuit is coupled to the input of the amplifier.

17. (Previously Presented) The pixel gain amplifier circuit of claim 1, wherein the input capacitor and the feedback capacitor at least partially determine a gain of the circuit, and wherein said gain is variable.

18. (Previously Presented) The pixel gain amplifier circuit of claim 17, further comprising means for changing said gain at the pixel rate.

19. (New) The pixel gain amplifier circuit of claim 1, wherein the charge sampled onto the input capacitor comprises charge corresponding to pixel data and charge corresponding to reset noise.